

**CLAIMS**

What is claimed is:

1. A communication network for transferring data packets between customer devices and the Internet, said customer devices being located at customer premises, said network comprising:

subscriber nodes located at said customer premises, each of said subscriber nodes including a router interconnected with said customer devices at one of said customer premises for receiving said data packets from said customer devices;

a control node in wireless communication with said subscriber nodes over a prescribed restricted frequency band, said prescribed frequency band being used for transmitting said data packets; and

a network aggregation node in communication with said control node for enabling transfer of said data packets between said control node and an Internet backbone.

2. A communication network as claimed in claim 1 wherein said each subscriber node further includes:

an antenna mounted to an external portion of said one customer premise, said antenna being in communication with said control node over said restricted frequency band;

a first unit enclosing said router, said first unit being located proximate said antenna at said external portion of said one customer premise, and said router being in wired communication with said antenna;

a second unit located inside of said one customer premise, said second unit having a data port in data communication with said customer devices; and

a cable having a first end in communication with said router of said first unit and a second end in communication with said data port of said second unit, said cable being configured to convey said data packets between said data port and said router.

3. A communication network as claimed in claim 2 wherein said customer devices are interconnected via a local area network (LAN), and said each subscriber node further comprises a network hub coupled between said data port and a junction of said LAN.

4. A communication network as claimed in claim 2 wherein:  
said cable is further configured to convey power to said outdoor unit; and  
said second unit further comprises a power input in communication with said second end of said cable for providing said power to said cable.

5. A communication network as claimed in claim 1 wherein said router includes a processor employing an open source computing platform.

6. A communication network as claimed in claim 1 wherein said router allocates bandwidth for communication of said data packets between said each subscriber node and said control node in response to a predetermined level of service for said each subscriber node.

7. A communication network as claimed in claim 1 wherein said router establishes a transmission priority of said data packets to be transmitted between said each subscriber node and said control node in response to a predetermined level of service for said each subscriber node.

8. A communication network as claimed in claim 7 wherein said data packets are Internet Protocol (IP) packets, and said router sets a precedence field in a header of said IP packet to establish said transmission priority.

9. A communication network as claimed in claim 7 wherein said data packets are Internet Protocol (IP) packets, and said router sets a type of service (TOS) field in a header of each of said IP packets to establish said transmission priority.

10. A communication network as claimed in claim 7 wherein said control node employs said transmission priority, established at said router, to forward said data packets to said network aggregation center.

11. A communication network as claimed in claim 1 wherein said control node communicates with said plurality of subscriber units using an industrial, scientific, medical (ISM) band.

12. A communication network as claimed in claim 1 wherein said control node provides radio frequency coverage over a prescribed coverage area, and said control node comprises:

- a plurality of control node routers;

- a plurality of directional antennas, one each of said control node routers being in communication with one each of said directional antennas to provide said radio frequency coverage over a sector of said prescribed coverage area; and

- a control node backbone in communication with said control node routers and said network aggregation node.

13. A fixed wireless network for transferring data packets between customer devices and the Internet, said customer devices being located at customer premises, said network comprising:

- subscriber nodes located at said customer premises, each of said subscriber nodes including:

- an antenna mounted to an external portion of one of said customer premises;

- a first unit located proximate said antenna at said external portion of said one customer premise, said first unit enclosing a router, said router being in wired communication with said antenna, and said router having a processor employing an open source computing platform;

- a second unit located inside of said one customer premise, said second unit having a data port in data communication with said customer devices; and

a cable having a first end in communication with said router of said first unit and a second end in communication with said data port of said second unit, said cable being configured to convey said data packets between said data port and said router so that said router is interconnected with said customer devices at said one customer premise;

a control node in wireless communication with said antennas of said subscriber nodes over a prescribed restricted frequency band, said prescribed restricted frequency band being used for transmitting said data packets; and

a network aggregation node in communication with said control node for enabling transfer of said data packets between said control node and an Internet backbone.

14. A fixed wireless network as claimed in claim 13 wherein:

said cable is further configured to convey power to said outdoor unit; and

said second unit further comprises a power input in communication with said second end of said cable for providing said power to said cable.

15. A fixed wireless network as claimed in claim 13 wherein said customer devices are interconnected via a local area network (LAN), and said each subscriber node further comprises a network hub coupled between said data port and a junction of said LAN.

16. A communication network as claimed in claim 13 wherein said router allocates bandwidth for communication of said data packets between said each subscriber node and said control node in response to a predetermined level of service for said each subscriber node.

17. A communication network as claimed in claim 13 wherein said router establishes a transmission priority for said data packets to be transmitted between said each subscriber node and said control node in response to a predetermined level of service for said each subscriber node.

18. A fixed wireless network as claimed in claim 13 wherein said control node communicates with said plurality of subscriber units using an industrial, scientific, medical (ISM) band.

19. A fixed wireless communication network for transferring Internet Protocol (IP) data packets between customer devices and the Internet, said customer devices being located at customer premises, said network comprising:

subscriber nodes located at said customer premises, each of said subscriber nodes including a router interconnected with said customer devices at one of said customer premises, said router being configured to allocate bandwidth and to establish a transmission priority for said IP data packets transmitted

from said each subscriber node in response to a predetermined level of service for said each subscriber node;

a control node for receiving said IP packets, said control node being in wireless communication with said subscriber nodes over an industrial, scientific, medical (ISM) band; and

a network aggregation node in communication with said control node for enabling transfer of said IP data packets between said customer devices and an Internet backbone.

20. A fixed wireless communication network as claimed in claim 19 wherein said control node employs said transmission priority to forward said IP packets to said network aggregation center.